



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,120	03/08/2007	Bruce Batchelder	200535	1219
53982	7590	06/23/2010		
General Electric Company GE Global Patent Operation 2 Corporate Drive, Suite 648 Shelton, CT 06484			EXAMINER PHASGE, ARUN S	
			ART UNIT 1795	PAPER NUMBER
			NOTIFICATION DATE 06/23/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gpo.mail@ge.com  
allyson.camaroli@ge.com

# Office Action Summary

Application No.

10/577,120

Applicant(s)

BATCHELDER ET AL.

Examiner

Arun S. Phasge

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13, 14 and 18-27 is/are rejected.
- 7) ☒ Claim(s) 10-12 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI.08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Interval Patent Application
- 6) ☐ Other: \_\_\_\_
- Page No(s)/Mail Date 9/16/09

## **DETAILED ACTION**

### ***Claim Objections***

Claims 10-12 and 15-17 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 112***

Regarding claims 1 and 4, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Mani, U.S. Patent 6,017,433.

Mani discloses the claimed fluid treatment line and system comprising a plurality of electrodialysis units arranged in stages to each receive a feed flow to be treated and a concentrate flow, wherein at least one stage includes one or more filled cell electrodialysis (EDI) units, with the feed flow in an order opposite to that of the concentrate flow (see figure 9). The patent teaches the control of such characteristics as electrical conductance or resistances (see col. 15, lines 25-33).

Mani further discloses the claimed method and apparatus for the electrodialysis treatment comprising a plurality of electrodialysis treatment units, said treatment units being configured for connection so as to receive a feed flow of feed fluid that is to be treated, and so as to receive a flow of concentrate fluid that is to receive material removed from the feed flow during treatment in said treatment units, a plurality of fluid connections interconnecting said treatment units in stages along the treatment line such that the feed fluid proceeds sequentially from a first stage along the treatment line such that feed fluid proceeds sequentially from a first stage to one or more later stages, and concentrate proceeds in an opposite sense from a later stage to one or more earlier stages of the treatment line (see figures 8-9 and claims 1-26).

Accordingly, since the Mani patent discloses each and every limitation, the

claims are anticipated.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8, 9, 13, 14, 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mani as applied to claims above, and further in view of Gallagher et al. (Gallagher), U.S. Patent 5,736,023.

The Mani patent discloses the treatment of biological material (see claims 1-26). Although the patent uses the same voltage of potentials in the subsequent stages, the patent teaches that other modes of operation are within the purview of the ordinary artisan in commercial operation (See col. 11, lines 31-41).

The reference further discloses the use of cleaning as claimed, wherein the range of the solution appears within the claimed range, to allow the continued use of the cell (see col. 18, lines 3-68). However, the patent fails to disclose that the cleaning occurs by a reverse flow through the cell as claimed. The patent further fails to teach the use of sensors and controllers as claimed.

The Gallagher patent is cited to show the use of a reverse direction of flow of the fluid during the reversal mode of operation (see col. 7, lines 26-44). The patent teaches the use of a sensor as claimed (see col. 22, lines 38-53). The patent further teaches the use of a controller as recited in the claims (see col. 22, lines 27-36).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Mani the teachings of Gallagher.

One having ordinary skill in the art would have been motivated to do this modification, because Gallagher teaches the modification to electrodeionization process and apparatus to allow the high-quality product fluid to be obtained.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arun S. Phasge/  
Primary Examiner, Art Unit 1795

Application/Control Number: 10/577,120  
Art Unit: 1795

Page 7